WHAT IS CLAIMED IS

1. A cigarette filter which comprises a polymeric matrix having a protein or a molecule containing an inorganic element or a mixture thereof wherein said protein , said molecule or said mixture thereof is encapsulated in said polymeric matrix.
2. A filter which comprises a polymeric matrix having a protein, a molecule containing an inorganic element or mixture thereof, encapsulated in said polymeric matrix made by freezing a protein and a polymeric substance together and then thawing said protein and polymeric substance.
3. The filter as claimed in claim 2, wherein said polymeric matrix is an inorganic polymeric matrix.
4. The filter as claimed in claim 3, wherein said inorganic polymeric matrix is a silicon polymeric matrix..
5. The filter as claimed in claim 2, wherein said polymeric matrix is an organic polymeric matrix.
6. The filter as claimed in claim 2, wherein said molecule is a metalloporphyrin.
7. The filter as claimed in claim 2, wherein said protein is a hemoglobin or myoglobin.
8. The filter as claimed in claim 2, wherein the filter is a cigarette filter.
9. A process to make a filter, which comprises incorporating at least one protein or a molecule containing an inorganic element in a polymeric substance, freezing said protein or said molecule and polymeric substance to form a frozen mixture hen

thawing said frozen mixture to form an activated powder, and using the activated powder as a filter.

10. The process as claimed in claim 9, wherein said polymeric substance is a silicic acid gel.

11. The process as claimed in claim 9, wherein said polymeric matrix is an inorganic polymeric matrix.

12. The process as claimed in claim 9, wherein said polymeric matrix is an organic polymeric matrix.

13. The process as claimed in claim 9, wherein said molecule is a metalloporphyrin.

14. The process as claimed in claim 9, wherein said protein is a hemoglobin or myoglobin.

15. The process as claimed in claim 9, wherein the filter is a cigarette filter.

16. The process as claimed in claim 9, wherein the freezing occurs at temperatures less than about –25°C.

17. The process as claimed in claim 9, wherein the freezing occurs at temperatures less than about –50°C.

18. The process as claimed in claim 9, wherein the freezing occurs at temperatures of about –70°C.

19. The process as claimed in claim 9, wherein the thawing occurs at about 23°C or an elevated temperature.

20. A process to remove aldehyde and/or NO from smoke which comprises passing smoke through the filter as claimed in claim 2.

21. A process of detecting at least one gas selected from the group consisting of carbon monoxide, NO and HCN which comprises passing a gas containing carbon monoxide, NO or HCN or a mixture thereof through a filter comprising a polymeric matrix powder having a protein or molecule containing an inorganic element or mixture thereof encapsulated in said polymeric matrix and said powder changes colors when the carbon monoxide, NO or HCN passes through said filter.

22. The process as claimed in claim 20, wherein said filter is a transparent filter.

23. A device used for detecting carbon monoxide, NO or HCN which comprises a transparent or translucent section which contains a polymeric matrix powder having a protein or molecule containing an inorganic element encapsulated in said polymeric matrix and said powder changes colors when carbon monoxide, NO or HCN passes through said powder.

24. The device as claimed in claim 23, wherein said section is transparent.

25. A method for detecting the presence of CO, NO or HCN which comprises passing a gas or liquid through a device which comprises a dry powder encapsulated with active component, said powder changes colors upon reaction with said gas or liquid if said gas or liquid contains a carbon monoxide gas.

26. The method as claimed in claim 25, wherein said device has a transparent section and said powder is in said transparent section.

27. The method as claimed in claim 25, wherein said device has a translucent section and said powder is in said translucent section.

28. A process to make a filter, which comprises sorption of a protein in a mesoporous material thereby forming a filter material.

29. A process to make a filter, which comprises covalent grafting a protein onto a silica surface thereby forming a filter material.